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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/624,540 | 07/23/2003 | Yoshinari Ichihashi | 57810-070 | 7515 |
| 20277 | 7590 | 12/20/2004 | EXAMINER | |
| MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096 | | | TRAN, MINH LOAN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2826 | |

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/624,540

Applicant(s)

ICHIHASHI ET AL.

Examiner

Minh-Loan T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 8-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/788,673.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/23/03.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/788,673, filed on 02/21/2001.

Information Disclosure Statement

2. The information disclosure statement filed 07/23/2003 has been considered.
3. The Preliminary Amendment filed on 07/23/2003 has been entered.

Oath/Declaration

4. The Oath/Declaration filed on 07/23/2003 is acceptable.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8-15, 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Gocho, Tetsuo (JP 08-250,449).

With regard to claim 17, figure 2 of Gocho, Tetsuo discloses a method of fabricating a semiconductor device comprising the steps of forming an insulator film including a phosphorus silicate glass (PSG) upper insulator film 17 and a SiN lower insulation film 16 on a first conductive part 57 (or 56, 53); etching the insulator film thereby forming an opening 63 (or 62, 61) reaching the first conductive part 57 (or 56,

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53); wherein the etching is conducted under substantially the same condition with respect to the upper insulator film 17 and the lower insulator film 16. Figure 2 of Gocho, Tetsuo does not show a second conductive part connected to the first conductive part 57 (or 56, 53) through the opening 63 (or 62, 61). It is inherent that the second conductive part connected to the first conductive part 57 (or 56, 53) through the opening 63 (or 62, 61) so that the source electrode, the drain electrode and the gate electrode of the transistor can be formed.

With regard to claims 18, 19, 12, 13, 15, figure 2 and paragraph [0026]-[0028], [0030], and [0019] of Gocho, Tetsuo disclose the etching is conducted under a condition where a C-F based polymer (C_4F_8) is formed when the first conductive part 57 (or 56, 53) is exposed to the etching.

With regard to claim 8, it is inherent that the lower SiN insulator film 16 has a higher etching selection ratio than the upper phosphorus silicate glass (PSG) insulator film 17 because the SiN insulator film 16 functions as an etch stopper (note paragraph [0021] of Gocho, Tetsuo.)

With regard to claim 9, figure 2 and paragraph [0013] of Gocho, Tetsuo disclose the first conductive part 57 (or 56, 53) contains a material having a higher etching selection ratio than the lower SiN conductive insulator 16.

With regard to claim 10, figure 2(1) of Gocho, Tetsuo discloses a step of silicifying the first conductive part 57 (or 56, 53) for forming silicide region 59 (or 58, 55) in advance of the step of forming the insulator film (16, 17).

With regard to claim 11, figure 2 (1-4) of Gocho, Tetsuo discloses the first conductive part include a gate electrode 53, a source region 56 and a drain region 57; and the step of silicifying the first conductive part includes a step of silicifying the surfaces of the gate electrode 53, the source region 56 and the drain region 57 in order to form the silicide regions 55 (gate), 58 (source) and 59 (drain).

With regard to claim 14, figure 2 of Gocho, Tetsuo discloses the SiN lower insulator film 16 is formed to be in contact with the surface of the first conductive part 57 (or 56, 53).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gocho, Tetsuo (JP 08-250,449).

Gocho, Tetsuo does not disclose the lower insulator includes an SOG film. Although Gocho, Tetsuo does not teach exact the material of the lower insulator film as that claimed by applicant, the material differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. Note *In re* Leshin, 125 USPQ 416, *In re* Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Circ. 1990).


Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Loan T. Tran whose telephone number is (571) 272-1922. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mlt
12/04


Minh-Loan T. Tran
Primary Examiner
Art Unit 2826